

## **ABSTRACT**

The present invention is related to systems and methods for modifying various non-equidimensional substrates with modifying agents. The system comprises a processing chamber configured for passing the non-equidimensional substrate therethrough, wherein the processing chamber is further configured to accept a treatment mixture into the chamber during movement of the non-equidimensional substrate through the processing chamber. The treatment mixture can comprise of the modifying agent in a carrier medium, wherein the carrier medium is selected from the group consisting of a supercritical fluid, a near-critical fluid, a superheated fluid, a superheated liquid, and a liquefied gas. Thus, the modifying agent can be applied to the non-equidimensional substrate upon contact between the treatment mixture and the non-equidimensional substrate.